



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,406	06/08/2000	William James Palmteer	17541	1400

7590 11/06/2002

The Whitaker Corporation  
Suite 450  
4550 New Linden Hill Road  
Wilmington, DE 19808-2952

EXAMINER

NORRIS, JEREMY C

ART UNIT	PAPER NUMBER
----------	--------------

2827

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/590,406

Applicant(s)

PALMTEER, WILLIAM

Examiner

Jeremy C. Norris

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 24-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-20 and 24-29 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,337,445, granted to Abbott et al. (hereafter Abbott).

Abbott discloses, referring to figures 7 and 8, a solder-coated article (805) comprising: a substantially non-deformable dielectric core (801) having a largest dimension ranging from 1 to 1000 microns (see col. 8, lines 15-25); a solderable metal layer (802/803) over said core; and a solder layer (808) over said metal layer [claim 1], wherein said core is a ceramic core see (col. 8, lines 15-35)[claim 2], wherein said core is a glass core (col. 8, lines 15-35) [claim 3], wherein said core is a spherical core [claim 4], wherein said core ranges from 25 to 200 microns in diameter (see col. 7, lines 55-65) [claim 5], wherein said solderable metal layer is selected from copper and nickel (see

col 8, lines 35-60) [claim 6], wherein said solder is selected from (a) a solder comprising lead and tin and (b) a solder comprising lead and indium (see col. 8, lines 35-50) [claim 7], wherein said solder layer is selected from a 63%Sn/37%Pb solder, a 95%Pb/5%Sn solder, and a 50%Pb/50%In solder (see col. 6, lines 35-50) [claim 8], wherein said solderable metal layer has a thickness of 0.1 to 1 micron (see col. 8, lines 65-68) [claim 27].

Additionally, Abbott discloses, referring to figures 7 and 8, a modified substrate comprising: a substrate (804); a metalized pad (806) on said substrate; and a bump feature (805) on said metalized pad, said bump feature comprising a substantially non-deformable dielectric core (801); a solderable metal layer (802/803) over said core; and a solder region (808) contacting at least a portion of said solderable metal layer and at least a portion of said metalized pad [claim 9], wherein said substrate is a semiconductor substrate [claim 10], wherein said substrate is a ceramic substrate [claim 11], wherein said substrate is a printed circuit [claim 12], wherein said printed circuit is selected from a printed circuit board and a flexible circuit [claim 13], wherein said core is a ceramic core [claim 14], wherein said core is a glass core [claim 15], wherein said solderable metal layer has a thickness of 0.1 to 1 micron (see col. 8, lines 65-68) [claim 28].

Moreover, Abbot discloses, referring to figures 7 and 8, solder bonded assembly comprising, a first substrate (804) comprising a first solder pad (806); a second substrate (820) comprising a second solder pad (819); a substantially non-deformable dielectric core (801) provided with a solderable metal layer (802/803) and disposed between said

first and second solder pads; and a solder region (808/818) covering at least a portion of each of (a) said first solder pad, (b) said second solder pad and (c) said solderable metal layer [claim 16], wherein said first and second substrates are selected from the group consisting of a semiconductor substrate, a ceramic substrate and a printed circuit [claim 17], wherein said first substrate is a semiconductor substrate and said second conductor is a printed circuit [claim 18], wherein said core is a ceramic core [claim 19], wherein said core is a glass core [claim 20], wherein said solderable metal layer has a thickness of 0.1 to 1 micron (see col. 8, lines 65-68) [claim 29].

Regarding claim 24, Abbott discloses, referring to figures 7 and 8, a solder-coated article (805) comprising: a dielectric core (801) having a largest dimension ranging from 1 to 1000 microns; a solderable metal layer (802/803) over said core; and a solder layer (808/818) over said metal layer; wherein said dielectric core has a melting temperature higher than said solder layer.

Regarding claim 25 Abbott discloses, a modified substrate comprising, a substrate (804); a metalized pad (806) on said substrate; and a bump feature (805) on said metalized pad, said bump feature comprising a dielectric core (801); a solderable metal layer (802/803) over said core; and a solder region (808) contacting at least a portion of said solderable metal layer and at least a portion of said metalized pad; wherein said dielectric core has a melting temperature higher than said solderable metal layer.

Regarding claim 26 Abbott discloses a solder bonded assembly comprising:

a first substrate (804) comprising a first solder pad (806); a second substrate (820) comprising a second solder pad (819); a dielectric core (801) provided with a solderable metal layer (802/803) and disposed between said first and second solder pads; and solder region (808/818) covering at least a portion of each of (a) said first solder pad, (b) said second solder pad and (c) said solderable metal layer; wherein said dielectric core has a melting temperature higher than said solderable metal layer.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-20 and 24-29 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). Specifically, Applicant added the limitation that the dielectric core be "substantially non-deformable".

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2827

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 703-306-5737. The examiner can normally be reached on Mon.-Th., 9AM - 6:30 PM and alt. Fri. 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0725 for regular communications and 703-308-0725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JCSN  
November 4, 2002

*Albert W. Paladini* 11-4-02  
ALBERT W. PALADINI  
PRIMARY EXAMINER